

Review of Literature

As I searched for literature on the topic of computerized assessment I found that the information available is quite broad. New innovative approaches to teaching and learning have been applied in classrooms and as a result terms like distance learning, online testing and e-assessments have begun to appear as topics in research studies around the world. What I have discovered through reading various articles is that not all the research that has been done is in support of using technology for assessment. What most researchers and experts seem to agree on is that both technology and assessments are a valuable part of today's education system, therefore it is necessary to determine the most effective way to use both. I have focused on articles and research that concludes one method of testing is better than the other as well as those that highlight some benefits of online assessment to both student and teacher.

Research has shown that one of the benefits to online or computerized assessments is the capability to provide immediate feedback to students and teachers. In the article *Pick and Click: Interactive Assessment Goes to School* written by Mark Nichol in 2007, California schools have started implementing interactive software for lessons and assessments. Technology coordinator in Los Angeles Nicole Miller discusses such systems and refers to them as providing validation on the spot for both teachers and students (Nichol, 2007). They know if responses are correct or incorrect the instant they are submitted and the computer tracks all of the records. David Collier, a teacher in California uses the system to replace multiple-choice paper tests and notes the instant feedback as one of his favorite features (Nichol, 2007). Since our students are part of a generation that grew up with instant access and instant information they expect that in a school setting as well. Jukes and McCain (2007) discuss this in their article *Windows On the Future*.

Such everyday expectations have led to the death of patience and the

emergence of a society increasingly expecting, wanting and demanding instant gratification. This is one of the reasons why it's harder and harder to get read today. Reading is a delayed gratification medium while TV, video games and the Web are immediate gratification media.

This same benefit of feedback was discussed in *Does Regular Online Testing Enhance Student Learning in Numerical Sciences? Robust Evidence from a Large Data Set* written by Simon Angus and Judith Watson in 2009. "Instructors are attracted by savings in both marking time and administrative costs of mark compilation, while for students, online quizzes give instantaneous and detailed feedback..." (Angus and Watson, p.255). These sources show that the teachers are enjoying the capabilities of instant feedback as much as the students are expecting it. Along with this is the fact that educators today are reaching out to the different learning styles of students with the instruction and delivery of the material. Experts assert that this should be met with assessments to match the learning styles. In *Network-Based Assessment in Education* written by David Gibson in 2003, many different assessment types were analyzed and compared to traditional assessment. "...there is a unique new potential for network-based assessments to measure what students and teachers know and can do. The forms of delivery and interactions are dramatically different from traditional assessments, giving rise to new possibilities for forms of collecting and analyzing information that are better aligned with what we know about how people learn." (Gibson, 2003)

Other research studies on computerized assessment make claims either for or against the effectiveness of it compared to traditional paper/pencil methods. One article ("Studies in Success: A survey of Assessment Research," 2002) discusses a study conducted by Boston

College's Center for the Study of Testing, Evaluation, and Educational Policy. This study makes the claim that traditional assessment methods are ineffective in measuring student abilities. They assert a reason for this to be that contemporary students are living in a digital world and therefore pencil/paper doesn't fit their learning styles. Another study (Angus & Watson, 2009) makes the claim that their research shows higher student achievement with online assessments.

On the other hand I have read some research that suggests online assessment does not significantly improve student achievement and may actually have the reverse effect. In *Improving Student Performance Through Computer-based Assessment: insights from recent research* by C. Ricketts and S.J. Wilks, they studied student performance on summative assessments in online formats and traditional formats. The study led them to a conclusion as follows: "Analysis of student results in the two years showed that students using online assessment did not perform as well as those using OMR-marked multiple-choice questions, even when the same questions were given to the students." (Ricketts and Wilks p. 475). The authors do go on to assert that it may have been the fact that the testing method was new and foreign to the students which may have impacted the results. This issue was also addressed by researchers Grainne Conole and Bill Warburton in *A Review of Computer-Assisted Assessment* written in 2005. They discuss that research has been done comparing the traditional paper and pencil assessment to computer-based assessments but that there are too many factors such as test-taking experience of the students and formation of the assessment questions that make it inappropriate to say one method is more effective than another (2005).

The information I have gathered supports the need for continuing research in this area. Though it seems that the literature on computerized assessment is inconclusive I am certain that I will find information through my research that will provide further insight to whether or not

computerized testing proves beneficial to students. Experts certainly disagree on the best way to assess student learning, however, what a majority of educators can agree on is that it is imperative that not only the diverse learning styles are being met but also the diverse testing styles.